

THE MARINE NITROGEN CYCLE

Nitrogen passes between air and seawater through a chemical reaction

Nitrifying bacteria 'fix' this nitrogen into useful forms

Marine plants and algae (known as primary producers) use this nitrogen to make proteins and fats, which they use to grow

Fish and other animals (known as consumers) eat the plants and algae, transferring nitrogen through the food chain

When animals and plants die and decompose, nitrogen is released and can be used again by the primary producers

In the Maldives, nutrients like nitrogen are naturally low. Coral ecosystems thrive in low nutrient waters.

Too much nitrogen can impact coral growth, increase the chance of diseases and cause algal growth which competes with corals for resources. Importantly, excess nitrogen makes corals more likely to become bleached.

Excess nitrogen from agriculture and sewage can therefore damage marine ecosystems in the Maldives

Plants like seagrass and mangroves can buffer coral reefs against the damaging effects of excess nitrogen in two ways:

1. Their roots quickly take up excess nitrogen and use it to grow
2. Their sediments contain lots of denitrifying bacteria, which convert excess nitrogen back into harmless nitrogen gas

We must protect seagrass and mangroves and reduce pollution to protect our corals!